Claims

1.   A data reproduction device for expanding and reproducing compressed data downloaded through a communication network, comprising:

memory means for temporarily storing the compressed data downloaded;

data expanding means for expanding the compressed data stored in the memory means;

reproducing means for performing streaming reproduction on data expanded by the data expanding means;

detecting means for detecting a data size of the compressed data temporarily stored in the memory means and a compression rate of the compressed data downloaded; and

control means for controlling to change a threshold value for the data size of the compressed data in accordance with the compression rate detected by the detecting means, and reading the compressed data from the memory means when the data size of the compressed data temporarily stored in the memory means reaches a prescribed threshold or more and transferring the compressed data to the data expanding means.

2.   The data reproduction device according to claim 1, wherein the control means controls to change the threshold value larger when the compression rate of the compressed data

temporarily stored in the memory means gets lower and to change

the threshold value smaller when the compression rate gets higher.

3.   The data reproduction device according to claim 2, wherein

        the detecting means detects the compression rate of the

compressed data based on data contained in a header or a footer of

a file of the compressed data downloaded.

4.   The data reproduction device according to claim 2, wherein

        the detecting means detects the compression rate of the

compressed data on the basis of bit rate data of the compressed

data downloaded.

5.   The data reproduction device according to claim 1, wherein

        the control means controls to change a first threshold

value for determining timing to read out and transfer the

compressed data from the memory means to the data expanding means

and a second threshold value for determining timing to interrupt

downloading of the compressed data into the memory means.

6.   The data reproduction device according to claim 1, wherein

        the control means controls to change the threshold value

in accordance with transmission capability of the communication

network.

7.   The data reproduction device according to claim 1, wherein the compressed data is MP3 (MPEG Audio Layer 3) data.

8.   A data reproduction method for expanding and reproducing compressed data downloaded through a communication network, comprising:

(a) a step of making a connection to à server delivering the compressed data;

(b) a step of requesting the server to transfer partial data of a maximum size within such a range that the compressed data does not overflow into a memory means at a time of downloading the compressed data;

(c) a step of starting reproduction compressed data of a prescribed amount is stored;

(d) a step of detecting a data size of compressed data temporarily stored in the memory means, and a compression rate of the compressed data downloaded;

(e) a step of controlling to change a threshold value for the data size of the compressed data in accordance with the compression rate detected in the step (d);

(f) a step of checking whether or not unreproduced compressed data in the memory means becomes less or equal to the threshold value; and

(g) a step of stopping reproduction when the compressed data is determined as being less or equal to the threshold value

in the step (f), wherein

the steps (c), (d), (e), (f), (g) are repeated until a transfer request of all data is completed.

9.   The data reproduction method according to claim 8, wherein, in the step (e), control is performed to change the threshold value larger when the compression rate of the compressed data temporarily stored in the memory means gets lower, and change the threshold value smaller when the compression rate gets higher.

10.   The data reproduction method according to claim 9, wherein in the step (d), the compression rate of the compressed data is detected based on data contained in a header or a footer of a file of the compressed data downloaded.

11.   The data reproduction method according to claim 9, wherein in the step (d), the compression rate of the compressed data is detected based on bit rate data of the compressed data downloaded.

12.   The data reproduction method according to claim 8, wherein in the step (e), control is performed to change a first threshold value for determining timing to read out the compressed data from the memory means and a second threshold value for determining timing to interrupt downloading of the compressed data

into the memory means.

13.   The data reproduction method according to claim 8, wherein
        in the step (e), control is performed to change the
threshold value in accordance with transmission capability of the
communication network.

14.   The data reproduction method according to claim 8, wherein
        the compressed data is MP3 (MPEG Audio Layer 3) data.

15.   A program for implementing a data reproduction method for
expanding and reproducing compressed data downloaded through a
communication network, the program causing a computer to execute:
        (a) a step of making a connection with a server delivering
the compressed data;
        (b) a step of requesting the server to transfer partial
data of a maximum size within such a range that the compressed
data does not overflow into the memory means at a time of
downloading the compressed data;
        (c) a step of detecting a data size temporarily stored in
the memory means, and a compression rate of the compressed data
downloaded;
        (d) a step of starting reproduction when compressed data
of a prescribed amount is stored;
        (e) a step of controlling to change a threshold value for

the data size of the compressed data in accordance with the compression rate detected in the step (c);

(f) a step of checking whether or not unreproduced compressed data in the memory means becomes less or equal to the threshold value; and

(g) a step of stopping reproduction when the compressed data is determined as being less or equal to the threshold value in the step (f), wherein;

the steps (c), (d), (e), (f), (g) are repeated until a transfer request of all data is completed.